

**Intelligence Mission Data (IMD) Support: EWIRDB, Characteristics & Performance (C&P), Signatures,
Order of Battle (OOB) & EWIRDB Support for Foreign Military Sales (FMS)**

For the

**National Air and Space Intelligence Center (NASIC)
Wright-Patterson AFB, OH 45433-5648**

**GSA BPA #ID05150001
Task Order – IMD-18-1
19 Dec 2017**

1.0 REQUIRING AGENCY: NASIC/GXS

2.0 TITLE: Intelligence Mission Data- Intercept Transition Logic Map Algorithm Generation

3.0 TECHNICAL AREA: Statement of Work (SOW)/Performance Work Statement (PWS) paragraphs 6.1 and 6.2

4.0 SCOPE OF WORK/OBJECTIVE: The Acquisition Intelligence Requirements Task Force (AIRTF) is headed by a 1-star equivalent SES and composed of members from the Acquisition, Intelligence and Requirements Communities. AIRTf task is to determine how to significantly improve intelligence support to acquisition and fielding of advanced weapons systems in “Acquisition Category One (ACAT-1),” the most significant weapons programs the Department is researching, engineering, acquiring and fielding.

The AIRTf Director reports to the Joint Staff J8 and takes operational tasking from a triumvirate of the J8, the Assistant Secretary of Defense for Acquisition and the Undersecretary of Defense for Intelligence (known as the AIR Executive Steering Group-AIRESG).

Specifically, the Task Force is focused on curbing unrealistic Program Manager appetites for unconstrained intelligence support, while simultaneously improving the efficiency of a 20th Century, Industrial Age business process and infrastructure in the Defense Intelligence Enterprise which struggles to meet Intelligence Mission Data (IMD) requirements, to include Geospatial Intelligence.

Shaping the future is important than sub-optimizing today’s capability. The AIRESG has concurred with this general notion and tasked the AIRTf to increase its level of effort on future advanced concepts.

The Task Force intends to characterize and drive transformation of this enterprise so that Intelligence producers and IMD-reliant weapons and sensors can effectively inter-operate in a fast-paced, future combat environment characterized by autonomous, sentient weapons and sensors. Today’s model simply cannot keep up or get ahead.

The overall objective of this effort is to develop algorithms capable of pattern recognition within signal intercepts when compared to a knowledge reference database in order to address gaps and shortfalls identified by the SIGINT community (classified and can be provided on request) to satisfy near-real-time IMD-to-the cockpit capability.

The Intercept Transition Logic Map (TLM) Algorithm Generation initiative entails automatic processing of a signal which results in details for mode-to-mode patterns, waveform patterns, and behavioral characteristics.

This initiative will leverage the Emitter Intercept Model and Transition Logic Map efforts currently being designed and developed.

The intercept TLM algorithms will be able to automatically detect patterns within and between signal modes, which will then be stored in a reference knowledge database consisting of system specific TLMs. Signals analysts, all-source analysts part of the Electronic Warfare Integrated Reprogramming (EWIR) community, and simulation and modelling analysts will be able to interact with this database and algorithms in whichever way best suits their mission.

The intercept level TLM algorithms will generate the capability to:

- automatically identify an intercept as a known signal or a new signal;
- simulate, stimulate, and/or model the individual intercept using an enterprise simulation tool;
- allow an analyst/modeler to build a unique scenario from intercept TLMs and system level TLMs;
- and decrease the analytic work load of the production analyst supporting EWIR.

This SOW will outline the required tasks needed to fully develop the algorithms used on intercept level Transition Logic Maps.

5.0 CONTRACTOR REQUIREMENTS: The contractor shall provide a program manager to provide total task management and supervise contractor personnel. The contractor program manager shall serve as the primary point of contact to the Government Client Representative (CR) for all technical aspects of the required work. No personal services shall be performed.

6.0 SPECIFIC TASKS: (STATEMENT OF WORK (SOW) REQUIREMENTS)

6.1. Task 1 – Project Management - The contractor shall provide all labor, facilities, and non-Government Furnished Equipment (non-GFE) to successfully complete all operations and maintenance and/or research and development R&D tasks that support the management of EWIRDB, Technical ELINT, C&P, Signatures, OOB, CSDB, MEPED, and FMS activities to include the following:

6.1.1. Create and maintain a Project Management Plan (PMP). The Project Management Plan shall describe, as a minimum, the resources necessary to accomplish the SOW. The Project Management Plan shall be completed and certified by the contractor, the CR, and the GSA Contracting Officer (CO) within 30 calendar days after award of Task Order. (Ref: Table 7.8 – deliverable 1.)

6.1.2 The contractor shall provide up-to-date status, individually for each Task Order with an active period of performance, through Monthly Status/Financial Reports. Monthly Status/Financial Reports shall be unclassified and shall include details on the following items for each previous time period: (1) Best up-to-date estimate of hours worked and therefore expected charges, including those of subcontractors; (2) status of work performance; (3) any problems or concerns encountered that may impact cost or schedule; (4) status of open items from previous reports; (5) any suggested solutions; (6) personnel changes; (7) proposed government actions; (8) a summary chart of the current financial status on all (labor, ODCs/travel, material). (Ref: Table 7.8 – deliverable 2.)

6.1.3 The contractor shall provide up-to-date status, individually for each Task Order with an active period of performance, through quarterly Program Management Reviews (PMRs). The contractor's program manager shall be required to present oral program reviews as requested by the NASIC CR or Technical Monitor (TM). (Ref: Table 7.8 – deliverable 3.)

6.1.4 The contractor shall prepare written documentation on the results of tasking to include verbal and written comments, informational memorandums and letters, meeting minutes, specialized technical reports and papers, as well as final report and studies as defined in individual Task Orders. The contractor shall present briefings on government selected studies, models, or analyses associated with task efforts to various intelligence organizations, committees, or panels as defined in the individual Task Orders by the government. The contractor shall prepare and present the briefings to the government appointed experts prior to the actual presentation, to ensure content accuracy and that security considerations are properly addressed and followed. (Ref: Table 7.8 – deliverables 4 and 5.)

6.1.5 The contractor shall maintain a complete listing of classified material issued by the government and maintained at the contractor's facility in performance of this contract to include, the title of the material; the origination date; the overall classification; the type of material (i.e. report, electronic media, etc.); the number of copies held; and any other information necessary to identify the inventory. Further, the contractor shall obtain written approval by the CR prior to the release of any classified material. The contractor shall provide the CR with a destruction certificate for all classified material that is destroyed. (Ref: Table 7.8 – deliverable 5.)

6.2. Task 2 – The contractor shall provide the necessary resources to plan, implement, and manage the tasks set forth below either on-site or off-site as required in each individual Task Order to the extent provided by the available man-hours. Activities under this task require support to include O&M and/or R&D tasks in the subsections to follow. (Ref: Table 7.8 – deliverables 4, 5, 8, and 9.)

6.2.1 Thru 6.2.4 Not Applicable

6.2.5 R&D Utility Development.

6.2.5.1 The contractor shall develop the standard format for intercept level Transition Logic Map algorithms using directions from the government and deliver a word document detailing the standard format, along with accompanying documentation and/or TLM algorithm examples in the appropriate file type (html, C++, Java Script etc.). (Ref. Table 7.8 deliverable 5a)

6.2.5.1.1 The output from running an algorithm against an intercept TLM shall be a truncated TLM which consolidates the detected and identified patterns in to both a human and a machine readable format to be stored in the to be determined location within the Intelligence Community GOV Cloud.

6.2.5.2 The contractor shall deliver a baseline of algorithms to the storage space built in task 6.2.5.3 compatible with running in any radar model editor (e.g. EWIRDB- JADE) and capable of (Ref. Table 7.8 deliverable 5b):

6.2.5.2.1 Detecting and identifying the mode-to-mode level change patterns within a signal intercept

6.2.5.2.2 Detecting and identifying the waveform patterns within a signal intercept

6.2.5.2.3 Detecting and identifying the behavioral characteristics of a signal intercept

6.2.5.3 The contractor shall design and build storage space in the Intelligence Community GOV Cloud architecture capable of handling and disseminating all intercept TLM generated algorithms. (Ref. Table 7.8 deliverable 5c)

6.2.5.3.1 The intercept TLM algorithm storage space shall be compliant with all policies and procedures for publishing content to the IC GOV Cloud.

6.2.5.4 The contractor shall deliver an application for actively managing and tracking intercept TLM algorithms workflow and quality control accessible through the IC GOV cloud architecture. At the very least including a description of the algorithm and an event/action log detailing date of creation, last edited, and by whom. (Ref. Table 7.8 deliverable 5d)

6.2.5.5 The contractor shall provide verification of the developed algorithms capability to detect patterns within signals by executing the full baseline of TLM algorithms against 500 government provided

intercepts to be provided when developer is ready to test and 500 contractor chosen intercepts. The output shall include all TLMs with mode-to-mode, waveform, and behavioral characteristics/patterns identified to the analyst. The results and therefor the algorithms will be verified by a government selected signals intelligence analyst. (Ref. Table 7.8 deliverable 5e)

6.2.5.6 The government shall provide the following resources for the contractor's reference:

6.2.5.6.1 Functional Requirements Specification for TLM Algorithms will be provided no later than 60 calendar days after award date;

6.2.5.6.2 SG5302- Automated Information Systems Standard Codes and Formats for Electrical Exchange of SIGINT data;

6.2.5.6.3 Interface Control Document for Transition Logic Map (TLM) based upon the format in the EWIR Toolkit;

6.2.5.6.4 Example algorithms developed within the program ASPIRE;

6.2.5.6.5 Other sources may be given to the contractor by the government as the government discovers or finalizes the resources throughout the development cycle;

6.2.5.6.6 The contractor may request additional reference materials through the CR, who shall have a response within 3 business days.

6.2.6 Not Applicable

7.0 DELIVERABLE/SCHEDULE

7.1 DELIVERABLE ACCEPTANCE CRITERIA: The contractor shall submit reports and other deliverables in accordance with the requirements set forth in **7.1 Deliverables Acceptance Criteria** (BPA) and Table 7.8 below.

7.2 Software Development. All software shall be IC GOV Cloud compliant; therefore, software that is not compatible with the IC GOV Cloud architecture shall not be considered as a viable submission. Software that is intended to extend the general IC GOV Cloud capabilities shall be considered on a case by case basis. Software that falls into this category shall require government approval prior to utilization for all software projects. (Ref: Table 7.8 – deliverable 5d)

7.2.1 Requirements Analysis. Perform analyses of infrastructure, operational, technical, functional, data and interface requirements. Design, develop, compare and evaluate potential technical solutions, concepts or alternatives to meet requirements. Transform statements of requirements into designs that satisfy NASIC needs in a sound technical and cost effective manner. Assess, determine and document the impacts that such solutions or other emerging technologies may have on NASIC mission.

7.7.1.1 Provide system architectural designs, ensuring that all the requirements for the software items are allocated, refined and documented to facilitate detailed design. Designs shall elaborate and/or refine software requirements to form a basis for the development and implementation of the capabilities and shall conform to NASIC and government standards, and best practices. Designs shall also be consistent with unique user, service, command, agency or community oriented policies and procedures. The design process may include Preliminary, Detailed and Critical Design Reviews (PDRs, DDRs and CDRs). (Ref: Table 7.8 – deliverable 5d)

7.7.1.2 Perform software requirements analysis and document the software level requirements describing, at a minimum, the functional capability specifications, performance, interfaces, qualifications requirements, security specifications, human factors engineering, data definition and database requirements, installation and acceptance requirements. Document and present the results. (Ref: Table 7.8 – deliverable 5d)

7.2.2 Software Problem Reports. Upon receipt of a Software Problem Report (SPR) from the government, investigate the problem to determine probable causes, potential resolutions, effort required, characterizations of various approaches, advantages and disadvantages of approaches, schedule, risks and cost of alternative courses of action to resolve, work around or mitigate the effects of the problem. Present results to the government via a WP for review, discussion, disposition, coordination and approval. Each WP shall contain testable performance requirements, deliverable items, delivery schedule, and cost. Perform the effort in accordance with the government-approved WP to close the SPR keeping the government cognizant of the status of the effort to achieve its goal of resolution within budget, performance and schedule. Participate in meetings to inform the government as to progress and/or need for approval to change the budget, scope, schedule or deliverables required as the situation may warrant. Deliver materials in compliance with NASIC configuration management, testing, installation practices and guidelines.

7.2.3 Baseline Change Requests. Upon receipt of a Baseline Change Request (BCR) from the government, perform a requirements analysis to define possible and recommended approaches, effort required, relationships to other ongoing effort, advantages and disadvantages of approaches, schedule, risks and cost of alternatives. Present results via a WP to the government for review, discussion, coordination and approval. Each WP shall contain testable performance requirements, deliverable items, delivery schedule, and cost. Perform the effort in accordance with the government-approved WP to develop the baseline change keeping the appropriate government representatives cognizant of the status of the effort towards achieving the objective within budget, performance and schedule. Participate in meetings to inform the government as to progress and/or need for approval to change the budget, scope, schedule or deliverables required as the situation may warrant. Deliver materials in compliance with NASIC configuration management, testing, installation practices and guidelines.

7.2.4 Certification and Fielding. Provide full documentation, functionality, and support to meet all testing, security, documentation and functional elements to transition the new or enhanced NASIC baseline capability to the field with full approval to operate at the NASIC and customer locations. Provide technical support for the installation, familiarization, certification and operation that will be maintained for each baseline and targeted customer. (Ref: Table 7.8 – deliverable 5d)

7.7.10.1 Perform and support all certification and security activities required to acquire security certification and approval to field. Provide all security and program documentation, support the program security testing, and comply with the NASIC approval processes for fielding the IC GOV Cloud baseline(s). Provide familiarization training for system capabilities.

TABLE 7.8

NO.	TITLE	SOW/BPA PARAGRAPH	RECIPIENT(S)	DRAFT DUE	FINAL DUE
1	Project Management Plan/Quality Control Plan (QCP)	6.1.1 and 14.0	CR	N/A	30 calendar days after Task Order award
2	Status/Financial Reports	6.1.2	CR	N/A	Monthly

3	Program Management Reviews (PMRs)	6.1.3	CR	N/A	Quarterly
4	Briefings	6.1.4 and 6.2	CR, Technical Representative or TM	Determined by TM	Determined by Technical Monitor
5	Reports and Studies	6.1.4 and 6.2	Designated Technical Monitor /POC	As negotiated with the Technical Monitor, but NLT 30 days prior to end of POP	15 days prior to end of POP
5a	TLM Algorithm Standard	6.2.5.1	CR, Technical Representative or TM	As negotiated with the Technical Monitor, but NLT 180 days prior to end of POP	120 days prior to end of POP
5b	Baseline of TLM Algorithms	6.2.5.2	CR, Technical Representative or TM	As negotiated with the Technical Monitor, but NLT 90 days prior to end of POP	60 days prior to end of POP
5c	TLM Algorithm Storage Space	6.2.5.3	CR, Technical Representative or TM	As negotiated with the Technical Monitor, but NLT 60 days prior to end of POP	30 days prior to end of POP
5d	TLM Algorithm Management Application	6.2.5.4	CR, Technical Representative or TM	As negotiated with the Technical Monitor, but NLT 30 days prior to end of POP	15 days prior to end of POP

5e	Baseline TLM Algorithm Validation & Verification Report	6.2.5.5	CR, Technical Representative or TM	As negotiated with the Technical Monitor, but NLT 30 days prior to end of POP	20 days prior to end of POP
6	Classified Holdings Inventory	6.1.5	CR	N/A	Quarterly
8	Training	6.2	CR	N/A	As required
9	Software	6.2 and 7.2	CR	N/A	As required
12	DD254 - Subcontractors	12.1.1	CR	N/A	Within 15 calendar days after Task Order
13	SCI Eligibility Package(s)	12.1.2	CR	N/A	Within 15 calendar days after Task Order award
14	Final Invoice and Release of Claims	15.7	CR	N/A	60 calendar days after the end of the Task Order

SERVICES DELIVERY SUMMARY

Performance Objective	Task Order Para	Performance Threshold
The contractor shall prepare documents, reports, non-hardware multi-media products, and/or studies on guidance system software and hardware components.	6.1 and 6.2	90% of all draft reports shall be submitted within fifteen (15) days of Government request; 100% within thirty (30) days; and have no more than two (2) technical errors. Any/all errors shall be fixed within fifteen (15) working days of receipt of notice by the Government.
Contractor shall deliver the classified report in Microsoft Office Word 2007. The final product for all subtasks shall consist of a single softcopy report containing the information learned during the performance of all subtasks.	6.1 and 6.2	A draft of these documents shall be delivered in softcopy to NASIC/GXFM 30 days prior to completion of the delivery order for NASIC review and comment. NASIC shall have no more than 20 days to review and provide comments back for inclusion in the final version of the documents which is due at task completion.

The contractor shall provide two reports detailing all work completed and any significant findings from their work.	6.1 and 6.2	The contractor shall provide two reports (one at midpoint and one at the end of the contract – these can be in a draft format and it is not necessary to go through technical editing process).
Status reports shall describe all work completed in the past month, any problems encountered, and any projected problems with the task schedule and budget.	6.1 and 6.2	The monthly status reports shall also detail the number of hours each employee working on the task expended, as well as the total dollar amount spent against the contract for that month and cumulatively. The report shall show labor hours expended broken out by labor category.
The contractor shall provide timely responses to government questions on interim presentations and monthly progress reports.	6.1 and 6.2	Within 3 working days, the contractor shall answer government questions on reported results.

ADMINISTRATIVE

A.1. PERIOD OF PERFORMANCE: The period of performance for this task shall be 12 months from date of award with one option year.

A.2. SECURITY LEVEL OF TASKING REQUIREMENT: Work related to these tasks shall require TS/SCI clearances and consent to a polygraph may be required of selected personnel with a desired SCI clearance. **(Refer to 12.0 SECURITY in BPA)**

A.3. SECURITY CLEARANCES: The contractor's key personnel must have a valid TOP SECRET/SCI- (TS/SCI) security clearance. **(Refer to 9.2 Personnel in BPA)**

- The contractor shall do everything possible to ensure continuity of effort by using the same key personnel throughout the period of the contract. However, if an individual leaves the contractor before the contract expires, the contractor must provide the Government with an individual of comparable qualifications, security clearances, and acceptable standards of moral and ethical conduct.

A.4. KEY PERSONNEL: Individuals designated as key personnel will be committed to the project for its duration and cannot be substituted or replaced without the written agreement of the Contracting Officer.

A.5. MANAGEMENT AND TRAINING: The contractor shall be responsible for selecting personnel who are well qualified to perform the required services, versed in supervising techniques used in their work, and for keeping personnel informed of all improvements, changes, and methods of operation. **(Refer to 9.3 Management and Training in BPA)**

A.6. INDIVIDUAL QUALIFICATIONS: The contractor shall submit names/resumes, and security SCI nomination request of each prime and sub-contractor individual proposed to work each delivery order. The personnel must meet any minimum security, experience and educational requirements specified in the Basic Contract and are subject to Government approval. Any exceptions shall be reviewed only on a case-by-case basis in accordance with the Basic Contract by the CR. **(Refer to 9.0 PERSONNEL/REQUIREMENTS in BPA)**

A.7. IDENTIFICATION OF CONTRACTOR PERSONNEL: All contractor personnel and their subcontractors must identify themselves as contractors or subcontractors during meetings, telephone conversations, and in electronic messages, or correspondence related to this contract. Further, all contractor-

occupied facilities (on Wright-Patterson AFB, OH or any other Government installations) such as offices, separate rooms, or cubicles must be clearly identified with contractor supplied signs, name plates or other identification, showing that these are work areas for contractor or subcontractor personnel.

A.8. PLACE OF PERFORMANCE: The majority of the work under this contract will be accomplished at the contractor's facility and at the National Air & Space Intelligence Center, 4180 Watson Way, Wright-Patterson AFB, and Ohio 45433-5648.

A.9. MEETING ATTENDANCE/TRAVEL REQUIRED:

Meetings: The contractor shall contact the CR within three (3) calendar days of task order award to schedule Kick-Off meeting.

Travel Requirements: Some travel is anticipated for this effort. Travel between Wright-Patterson AFB, OH and the local contractor's office, and vice versa, is not a reimbursable cost under this contract. **(Refer to BPA 8.2 Travel Requirements)**

A.10. GOVERNMENT FURNISHED FACILITIES AND INFORMATION: The government will provide the following resources: **(Refer to 10.0 GOVERNMENT FURNISHED FACILITIES, EQUIPMENT AND INFORMATION in BPA)**

- a) NASIC/GXS shall provide the contractor with access to the desks, chairs, computers, phones, copiers, and computer facilities when necessary to present to the government work required under this task, which is performed on-site at Wright Patterson AFB, OH at no cost to the contractor.
- b) Access to the existing databases.
- c) Current Security Classification guidance and other required reference documentation to support Task Order.

A.11. Technical Monitor/Manager(s):

PRIMARY: (b) (4)
ALTERNAT

A.12. GENERAL INFORMATION: It has been determined that this acquisition does not meet the definition of "Essential Contract Service" as defined in DoDI 3020.37 dated 05 Nov 90. This instruction is not applicable to this effort.

A.13. INFORMATION TECHNOLOGY (IT): All IT solutions to be implemented at NASIC must conform to and be in compliance with the NASIC Enterprise Architecture as published by the SIMO and approved by the Chief Information Officer (CIO). Any deviations from the NASIC IT standards will be addressed through the processes outlined in NASICI 33-108. All contractors and personnel requiring accounts with elevated system/network privileges must be trained and certified in accordance with DoD 8570.01-M and DFARS 252.239-7001. **(Refer to 15.9 INFORMATION TECHNOLOGY (IT) in BPA)**

A.14. PAYMENT: Refer to 18.0 in BPA.

EVALUATION CRITERIA

The Offeror's proposal shall be judged using the following criteria (Management and Staff Plan and Proposed Cost):

1. Management and Staffing Plan

- Staffing plan highlighting the personnel proposed their experience, qualifications and current clearance level.
- The contractor is required to have technical capabilities in Electronic Intelligence (ELINT) analysis, including familiarity with corporate radar model editors and other ELINT analysis tools, developing algorithms to apply to ELINT intercepts, and developing software/applications in a cloud architecture.

2. Proposed Cost

- The Offeror shall submit a cost proposal detailing costs by each task and/or subtask, hours, and labor category.